

## E. WETLANDS

# Copper 4a

### INTRODUCTION

The following text describes potential wetland impacts for the project alternatives. It is important to note, prior to a discussion of impacts, that significant adjustments were made to the location of project elements early in the environmental review process in an effort to minimize and eliminate impacts to wetlands to the maximum extent possible. Working collaboratively, representatives of the USACE, Forest Service, and CMR reviewed the locations of proposed ski trails, utility line installation corridors, and maintenance road routes in an effort to identify alternatives alignments/locations that would avoid or minimize impacts to wetlands to the greatest extent possible. Adjustments/modifications were made to the appropriate project elements to minimize wetland impacts, to the extent practical. See Chapter II, Revisions Made to the Proposed Action for additional detail.

In alternatives 2 through 5, indirect impacts to wetlands would include increased rates of erosion and sedimentation due to vegetation removal and earth disturbance in adjacent upland areas. BMPs such as silt fencing and matting would be utilized to reduce the rates of erosion, sedimentation, plant disturbance, and soil compaction in all areas proximate to wetlands.

### DIRECT AND INDIRECT EFFECTS

#### Alternative 1

The No Action alternative is not expected to affect riparian and wetland resources within the study area. No new road construction, trail clearing or lift construction would occur at CMR under Alternative 1. However, due to the relatively high number of wetlands and stream channels at CMR, it is possible that jurisdictional impacts could occur in the future due to repair or maintenance of existing resort facilities. Should future operational and/or maintenance activities be required in the future, CMR would consult with the Forest Service and USACE to obtain the necessary permits and approvals.

**Table IV E-1:  
Proposed Wetland Impacts by Alternative**

	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5
Proposed tree removal in forested wetlands (acres)	0.0	1.8	1.0	2.3	1.4
Proposed temporary impacts to wetlands (acres)	0.0	14.4	12.6	4.6	8.2
Proposed permanent impacts to wetlands (acres)	0.0	0.07	< 0.01 <sup>54</sup>	< 0.01	0.07

Note: These numbers are not in addition to total vegetation clearing described in Table II-2.

Proposed tree removal disclosed above is a conservative "worst case" disclosure because a portion of the forested wetland clearing would occur as glading and would therefore not result in complete removal of forested vegetation.

Source: SE GROUP



<sup>54</sup> For the purposes of this table, the 24 square feet (0.0005 acre) of permanent wetland impacts under alternatives 3 and 4 are disclosed as < 0.01 acre.

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## Alternative 2

The development of the various improvements discussed in the Proposed Action would permanently impact 0.07 acre of jurisdictional wetlands as a result of road construction. These impacts would be subject to any mitigations established by the USACE during the 404 permitting process that would take place during project implementation. Creation of proposed new ski trails would involve flush cutting trees in forested wetland areas resulting in 1.8 acres of non-jurisdictional effects.<sup>55</sup> Refer to Table IV E-1 for a list of impacts by alternative. Tree species that would be flush cut include aspen, Engelmann spruce, and subalpine fir. Tree removal in forested wetlands would likely result in a decrease in overall evapotranspiration (ET) rates within affected wetlands. Reduced ET would result in localized increases in surface and/or groundwater availability. The proposed areas of forested wetland clearing detailed above would be minimal and dispersed to such a degree that any change in ET rates is expected to be incremental and inconsequential. Over time, (perhaps five to ten years) as formerly forested wetlands transition to emergent and/or shrub dominated wetlands; ET rates approaching previous levels would return to the impacted wetland systems.

Wetlands in areas proposed for flush cutting would experience a shift in general plant composition (wetland type conversion). Increased amounts of solar radiation reaching the ground and increased available moisture (resulting from decreased ET rates) would favor different species such as heart-leaf bitter-cress (*Cardamine cordifolia*) and chiming bluebells (*Mertensia ciliata*). Gladed trails would preserve varying amounts of overstory vegetation. In areas proposed for glading, it is anticipated that the amount of wetland plant community change would be somewhat less than on new ski trails where all trees would be cut. In addition, four years of field observations at CMR indicate that reliable hydrology persisted in wetlands that were flush cut or slope dozed ten or more years ago. Type conversion has occurred at CMR, but overall wetland plant communities have persisted.

Snowmaking pipeline/utility line installation would result in 14.3 acres of temporary impacts to jurisdictional wetlands. The resultant effects of snowmaking pipeline installation in wetlands are expected to be minor given appropriate utilization of mitigation measures. Snowmaking pipelines would be installed in order to prohibit or impede groundwater movement, which would involve the use of impervious structures/substances (e.g., clay collars) periodically spaced within the linear disturbance in and proximate to pertinent wetland areas. In addition, trench backfill would be compacted to prohibit the diversion of subsurface flows within the pipeline corridor in order to maintain wetland hydrology. Topsoil would be stockpiled during construction and replaced in order to preserve the wetland seed bank. Additional plantings (of approved native plant material) would be utilized where necessary in order to speed the recovery of the wetland community. Aboveground snowmaking pipe installation would be implemented through fens. The aboveground installation would utilize helical screws thereby eliminating permanent impacts to fens<sup>56</sup>. The low impact, non-intrusive pilings would be installed along 4,405 feet of

<sup>55</sup> Proposed tree removal disclosed above is a conservative "worst case" disclosure because a portion of the forested wetland clearing would occur as glading and would therefore not result in complete removal of forested vegetation.

<sup>56</sup> The low impact helical screws (i.e., pilings) do not constitute fill because they do not constitute the equivalent (in regards to pilings) "of replacing an aquatic area with dry land or changing the bottom elevation of a waterbody." (33 CFR 323.2).